

REVIEW

**I Simplify the expressions:**

1. $(-8xy)(x^5y^4)(-4xy)$ 2. $5(a-1)-4[2a-4(a-3)]$ 3. $x^2y(xy-x)-7xy(x^2y-x^2)$ 4. $x[2x^2+x(x-3(x-1))]$

II Evaluate the expressions:

1. $\frac{5y-6}{2x+1}$ when: $x = -4; y = -3$ 2. $xy + x^2$ when: $x = -\frac{2}{3}, y = \frac{4}{5}$

III Solve each equation:

1. $\frac{2}{3}(v-4) = 2$ 2. $\frac{4}{11} - 2y + 5y = \frac{9}{11} + y$ 3. $\frac{5}{6} = \frac{2u-3}{5}$ 4. $\frac{3(n-2)}{5} = \frac{3n+6}{6}$
 5. $\frac{5}{6}x - \frac{2}{3} = \frac{1}{2}$ 6. $\frac{10(y+2)}{7} = 2y-4$ 7. $9(4y-3) = 6(6y-4) - 3$ 8. $\frac{x+1}{3} = 5 - \frac{x+2}{7}$

IV Inequalities

2. Graph the following sets and express them using interval notation:

a) $\{x | x \leq -2\}$ b) $\{x | 2 < x \leq 3\}$ c) $\{x | -3 \geq x \geq -7\}$

V – Solving Linear Inequalities in two variables

For exercises 1 -18 , do the following: a) solve the following inequalities; b) graph the solution set on the number line; c) use interval notation for the solution set.

1) $-2(2x+3) \geq 14$; 2) $-\frac{2}{5} < \frac{x-4}{3} \leq 4$; 3) $-1 < \frac{x+1}{2} \leq \frac{5}{2}$
 4) $\frac{2x+3}{3} + \frac{3x-4}{2} > \frac{x-2}{2}$ 5) $-1 \leq -x+12 \leq 50$

VI Simplify each expression. Write the final answer using only positive exponents.

a) $\left(\frac{2a^{-2}b}{3ab^{-3}}\right)^3$ b) $\frac{a^0 + b^0}{2(a+b)^0}$ c) $\frac{(-3p^4q^{-5})^{-3}(2p^{-4}q^3)^{-2}}{4p^5q^{-2}}$ d) $\left(\frac{2x^{-4}y}{x^5y^5}\right)^{-3} \left(\frac{4x^{-2}y^0}{x^7y^2}\right)^2$

VII Simplify the following:

a) $(x+1)^3$ b) $(2a-1)^3$ c) $(x+2)^4$ d) $\left(\frac{2}{3}x + \frac{5}{6}y\right)^2$ e) $\left(\frac{10}{11}x-1\right)\left(\frac{10}{11}x+1\right)$

VIII Solve each equation by factoring:

a) $x^2 - 9 = 0$ b) $x^2 - 6x - 7 = 0$ c) $y^2 + 2y = 0$
 d) $-20x^2 + 6 = -7x$ e) $x^3 + 4x^2 + 3x = 0$ f) $10x^2 + 43x = 9$
 g) $(2x+3)(3x-5) = -10$